Amendments to the Claims are as follows:

1. (Currently Amended) A method of producing blood products *in vitro*, ~~in which~~, the method comprising:

a) isolating non-SV40 transformed mesenchymal stem cells ~~are isolated~~, which are CD34-negative, and which are negative for CD45 and positive for CD105, CD59, CD90, CD13, and MHC I after at least one passage in culture; and

b) culturing said isolated non-SV40 transformed mesenchymal stem cells ~~are cultured~~ with at least one of the following growth factors added individually or in combinations thereof:

stem cell factor (SCF), thrombopoietin (TPO), fit-3 ligand (FL), interleukins, including interleukin-3 (IL-3) and interleukin-6 (IL-6), granulocyte-colony stimulating factor (G-CSF), granulocyte-macrophage-colony stimulating factor (GM-CSF), erythropoietin (Epo), vascular-endothelial growth factor (VEGF), basic fibroblast growth factor (bFGF), hepatocyte growth factor (HGF), insulin-like growth factor (IGF), epidermal growth factor (EGF), leukaemia inhibitory factor (LIF), and hydrocortisone (HC),

for a time sufficient to produce at least one type of blood products.

2. (Original) The method of claim 1 wherein said at least one type of blood products comprises myeloid stem cells.

3. (Original) The method of claim 1 wherein said at least one type of blood products comprises endothelial cells.

4. (Original) The method of claim 1 wherein said at least one type of blood products comprises lymphoid stem cells.

5. (Original) The method of claim 1 wherein said at least one type of blood products comprises dendritic cells.

6. (Original) The method of claim 1 wherein said at least one type of blood products comprises erythroid cells.

7. (Original) The method of claim 1 wherein said at least one type of blood products comprises megakaryocytes.

8. (Currently Amended) ~~Use of a blood product obtained according to a method of any one of claims 1 to 7 for preparing a pharmaceutical composition for~~ A method of treating a patient in need of a blood product, the method comprising:

a) isolating non-SV40 transformed mesenchymal stem cells, which are CD34-negative, and which are negative for CD45 and positive for CD105, CD59, CD90, CD13, and MHC I after at least one passage in culture; and

b) culturing the isolated non-SV40 transformed mesenchymal stem cells *in vitro* with at least one of the following growth factors added individually or in combinations thereof:

stem cell factor (SCF), thrombopoietin (TPO), fit-3 ligand (FL), interleukins, including interleukin-3 (IL-3) and interleukin-6 (IL-6), granulocyte-colony stimulating factor (G-CSF), granulocyte-macrophage-colony stimulating factor (GM-CSF), erythropoietin (Epo), vascular-endothelial growth factor (VEGF), basic fibroblast growth factor (bFGF), hepatocyte growth factor (HGF), insulin-like growth factor (IGF), epidermal growth factor (EGF), leukaemia inhibitory factor (LIF), and hydrocortisone (HC),

for a time sufficient to produce at least one type of blood products;

isolating the blood products; and

delivering a therapeutic amount of at least one blood product produced to the patient.

9. (Currently Amended) The ~~use~~ method of claim 8 wherein said at least one type of blood products is selected from ~~comprises~~ myeloid stem

cells, endothelial cells, lymphoid stem cells, dendritic cells, erythroid cells, megakaryocytes and combinations thereof.

10-14. (Cancelled)

15. (Currently Amended) The ~~use~~ method of claim 8, wherein the pharmaceutical composition is for treating patients suffering from leukemia, thrombocytopenia, leukopenia, granulocytopenia, lymphocytopenia, aplastic anemia, and/or autoimmune disease with or without bone marrow involvement, HIV patients, patients after chemotherapy, total body irradiation or irradiation of single parts of the body, patients with vascular, ischemic and/or malignant disease, or patients with cardiac ischemia.

16. (Currently Amended) The ~~use~~ method of claim 8, wherein the pharmaceutical composition is for treating patients suffering from anemia, leukopenia, thrombocytopenia and vascular diseases.

17. (Currently Amended) The ~~use~~ method of claim 16, wherein the anemia is due to acute leukemia, due to chronic leukemia, due to osteomyelofibrosis, due to aplastic anemia, due to thalassaemia, due to sickle cell disease, due to loss of blood, due to chemotherapy, due to medical drugs other than chemotherapy, due to radiation, and/or due to abuse of toxic compounds, wherein the leukopenia is due to acute leukemia, due to chronic leukemia, due to osteomyelofibrosis, due to aplastic anemia, due to thalassaemia, due to sickle cell disease, due to loss of blood, e.g. after an accident, due to chemotherapy, due to medical drugs other than chemotherapy, due to radiation, and/or due to abuse of toxic compounds, wherein the thrombocytopenia is due to acute leukemia, due to chronic leukemia, due to osteomyelofibrosis, due to aplastic anemia, due to thalassaemia, due to sickle cell disease, due to loss of blood, e.g. after an accident, due to chemotherapy, due to medical drugs other than chemotherapy, due to radiation, and/or due to abuse of toxic compounds.

18. (Currently Amended) The ~~use~~ method of claim 16, wherein the vascular disease is autoimmune vasculitis, arterial occlusive disorders,

venous occlusive disease, and/or artheroscierosis, and for treating of patients suffering from ischemic diseases, such as coronary heart disease, stroke, acute renal failure, and/or claudicatio intermittens.

19. (Currently Amended) A method of differentiating non-SV40 transformed mesenchymal cells *in vitro*, in which:

a) non-SV40 transformed mesenchymal stem cells are isolated, which are CD34-negative, and which are negative for CD45 and positive for CD105, CD59, CD90, CD13, and MHC I after at least one passage in culture; and

said isolated non-SV40 transformed mesenchymal stem cells are cultured with at least one of the following growth factors added individually or in combinations thereof:

stem cell factor (SCF), thrombopoietin (TPO), fit-3 ligand (FL), interleukins, including interleukin-3 (IL-3) and interleukin-6 (IL-6), granulocyte-colony stimulating factor (G-CSF), granulocyte-macrophage-colony stimulating factor (GM-CSF), erythropoietin (Epo), vascular-endothelial growth factor (VEGF), basic fibroblast growth factor (bFGF), hepatocyte growth factor (HGF), insulin-like growth factor (IGF), epidermal growth factor (EGF), leukaemia inhibitory factor (LIF), and hydrocortisone (HC),

for a time sufficient to produce at least one type of blood products.

20. (Currently Amended) The method of claim 19 wherein said at least one type of blood products is selected from ~~comprises~~ myeloid stem cells, endothelial cells, lymphoid stem cells, dendritic cells, erythroid cells, megakaryocytes and combinations thereof.

21-25. (Cancelled)

26. (Currently Amended) Method for preparing a pharmaceutical composition comprising a blood product for treating a patient in need of said

blood product, wherein said method comprises the method of ~~any one of~~ claim~~s~~ 1 ~~to 7~~ for providing said blood product.

27. (Currently Amended) The method of claim 26 wherein ~~said at least one type of~~ the blood product~~s~~ is selected from ~~comprises~~ myeloid stem cells, endothelial cells, lymphoid stem cells, dendritic cells, erythroid cells, megakaryocytes and combinations thereof.

28-32. (Cancelled)

33. (Original) The method of claim 26, wherein the pharmaceutical composition is for treating patients suffering from leukemia, thrombocytopenia, leukopenia, granulocytopenia, lymphocytepenia, aplastic anemia, and/or autoimmune disease with or without bone marrow involvement, HIV patients, patients after chemotherapy, total body irradiation or irradiation of single parts of the body, patients with vascular, ischemic and/or malignant disease, or patients with cardiac ischemia.

34. (Original) The method of claim 26, wherein the the pharmaceutical composition is for treating patients suffering from anemia, leukopenia, thrombocytopenia and vascular diseases.

35. (Original) The method of claim 34, wherein the anemia is due to acute leukemia, due to chronic leukemia, due to osteomyelofibrosis, due to aplastic anemia, due to thalassaemia, due to sickle cell disease, due to loss of blood, due to chemotherapy, due to medical drugs other than chemotherapy, due to radiation, and/or due to abuse of toxic compounds, wherein the leukopenia is due to acute leukemia, due to chronic leukemia, due to osteomyelofibrosis, due to aplastic anemia, due to thalassaemia, due to sickle cell disease, due to loss of blood, e.g. after an accident, due to chemotherapy, due to medical drugs other than chemotherapy, due to radiation, and/or due to abuse of toxic compounds, wherein the thrombocytopenia is due to acute leukemia, due to chronic leukemia, due to osteomyelofibrosis, due to aplastic anemia, due to thalassaemia, due to sickle cell disease, due to loss of blood, e. g., after an accident, due to

chemotherapy, due to medical drugs other than chemotherapy, due to radiation, and/or due to abuse of toxic compounds.

36. (Original) The method of claim 16, wherein the vascular disease is autoimmune vasculitis, arterial occlusive disorders, venous occlusive disease, and/or artherosclerosis, and for treating of patients suffering from ischemic diseases, such as coronary heart disease, stroke, acute renal failure, and/or claudicatio intermittens.